

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: Gemini Near InfraRed Spectrograph (GNIRS)

WBS: 5.1

Project Description: 1-5 um Spectrograph with multiple filters, slits, Deckers, prisms, gratings and cameras.

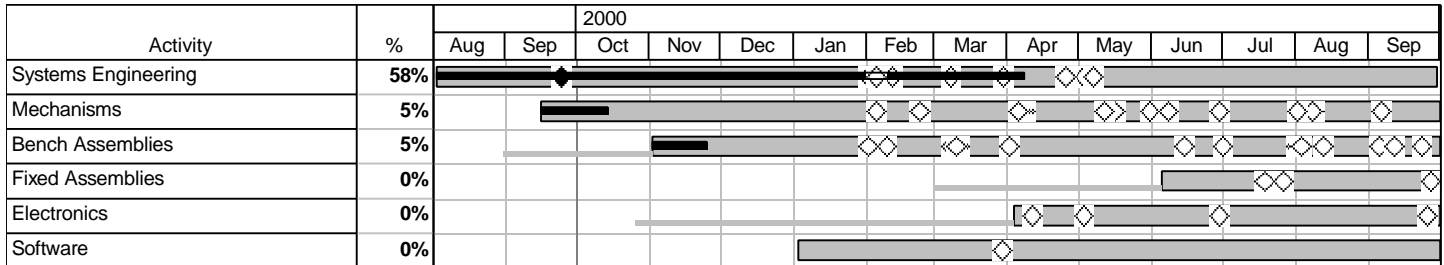
WPM: N. Gaughan

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$3,391,232	\$630,657	\$2,760,575	\$3,391,232
Capital	\$836,462	\$118,504	\$717,958	\$836,462

Key Personnel		
Title	Name	% Dedicated
PM	Gaughan	100
PS	Elias	100
ME	Goble	100
ME	Muller	100
EE	Rudeen	100
MD	Andrew	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$53,542	\$94,126	\$98,952	\$75,981	\$55,385	\$106,421	\$94,730	\$129,787	\$114,861	\$123,511
Actual Labor	\$34,302	\$50,463	\$51,277	\$47,901	\$48,380	\$40,983				
Cum Over/Under	\$19,240	\$62,903	\$110,578	\$138,658	\$145,663	\$191,861				
FTE Loading (FTE)										
Planned	12	15	14	13	13	14	16	19	20	19
Actual	5.6	8.3	8.4	7.9	8.0	6.7				
Capital (\$K)										
Planned Capital	\$0	\$34,100	\$6,250	\$9,810	\$8,780	\$19,450	\$1,500	\$8,851	\$81,330	\$53,940
Actual Capital	\$12,798	\$1,608	\$718	\$4,409	\$4,351	\$17,350				

Key Milestones		
Activity	Date	Status
Project Start	1/1/1999	C
Pre-Fab Review	2/15/2000	



% Complete: 11%
Total Milestones: 192
Completed Milestones: 1
Key Milestone: Pre-Fabrication Review

BCWS	383,515	SPI	1.06
BCWP	408,123	CPI	1.63
ACWP	249,680		

Scope Changes:

- There are no new technical scope changes.

Pending Issues & Resolutions:

- The optical bench designs are behind schedule. The designs are in process, with most of the definition of the wavefront sensor bench and forward optical bench completed.
- The Linear and Rotary drive prototypes are taking longer than planned, but are in fabrication, with testing starting in mid-February. The Optical Mount Prototype is in final test.
- The second Camera Assembly barrel started late because of prototype design work, but is now in design.
- Work on Filter Wheel and Environmental Cover Assembly mechanisms was delayed for the same reason, but has now started.

Project Manager's Assessment of Project Health:

- Acceptable. We are essentially 4 weeks behind schedule. We have re-planned the schedule to reflect slipping bench 3D design/analysis and the Pre-Fab Review to May. This has allowed more time to finish the risk-reduction prototype activity. The projected instrument delivery date in summer 2002 is relatively unaffected.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Systems Engineering

WBS: 5.2

Project Description: Includes analyses, prototyping, and optical design updates.

WPM: J. Elias

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$166,174	\$99,830	\$66,344	\$166,174
Capital	\$16,910	\$28,275	-\$11,365	\$16,910

Key Personnel		
Title	Name	% Dedicated
PS	Elias	100
ME	Goble	100
ME	Muller	100
OE	Liang	10
IM	Rath	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$ 12,882	\$49,723	\$36,877	\$20,824	\$ 13,982	\$26,756	\$ 5,130	\$ 0	\$ 0	\$ 0
Actual Labor	\$5,352	\$22,723	\$20,913	\$17,980	\$17,224	\$15,638				
Cum Over/Under	\$7,530	\$27,000	\$50,494	\$53,338	\$50,096	\$53,684				
FTE Loading (FTE)										
Planned	2	8	6	3	2	2	1	0	0	0
Actual	0.9	3.7	3.4	3.0	2.8	2.6				
Capital (\$K)										
Planned Capital	\$0	\$3,100	\$5,000	\$8,810	\$0	\$0	\$0	\$0	\$0	\$0
Actual Capital	\$525	\$2,178	\$197	\$2,186	\$4,544	\$18,645				

Key Milestones		
Activity	Date	Status
Analysis		
Cold Motor T&E		
Prototyping		
Optics Update		

Activity	%	2000															
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Thermal analysis	16%		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Structural Analysis	0%																
Update Optics Design	41%					█	█	█	█	█	█	█	█	█	█	█	█
Mechanism Test Set	56%		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Cold Motor Testing & Evaluation	84%		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Rotary Prototype Mechanism	84%	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Linear Prototype Mechanism	74%		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Prototype Optics Mounts	91%		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

% Complete: 58%
Total Milestones: 10
Completed Milestones: 1

Scope Changes:

- None.

Pending Issues & Resolutions:

- The analyses supporting the bench design have been rescheduled to follow the solid modeling of the benches and will be completed before the May 11 review. A more detailed follow-on analysis will be done after the review to insure something has not been missed in the design.
- The Linear and Rotary drive prototypes are taking longer than planned, but are in fabrication, with testing starting in mid-February. The Optical Mount Prototype is in final test.

Project Manager's Assessment of Work Package Health:

- Good. Scheduling a verification analysis task after the Pre-Fab review has given some relief to the analysis task, with no serious impact the overall schedule. The first order analysis done before the review should answer the key questions on the goodness of the design approach and sufficiently validate the bench solid model designs. All other components of this work package are under control and on an acceptable schedule.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Mechanisms

WBS: 5.3.1

Project Description: Includes the design, fabrication and test of the 9 mechanisms used in GNIRS.

WPM: G. Muller

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$607,628	\$39,472	\$568,156	\$607,628
Capital	\$274,217	\$960	\$273,257	\$274,217

Key Personnel		
Title	Name	% Dedicated
ME	Muller	100
MD	Andrew	100
MD	Rosin	100
MD	Downey	100
MD	Robles	100
MT	Davis	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$0	\$4,123	\$18,012	\$18,411	\$17,560	\$28,447	\$33,220	\$39,303	\$45,729	\$52,89
Actual Labor	\$0	\$2,014	\$12,274	\$10,033	\$9,187	\$5,964				
Cum Over/Under	\$0	\$2,109	\$7,847	\$16,225	\$24,598	\$47,081				
FTE Loading (FTE)										
Planned	0	1	3	3	3	5	5	6	8	
Actual	0.0	0.3	2.0	1.7	1.5	1.0				
Capital (\$K)										
Planned Capital	\$0	\$0	\$0	\$0	\$4,080	\$4,450	\$0	\$7,151	\$6,380	\$52,00
Actual Capital	\$0	\$475	\$472	\$6	\$7	\$0				

Key Milestones		
Activity	Date	Status

Activity	%	2000														
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Camera Assembly	9%															
Detector Focus Assembly	0%															
Environmental Cover Assembly	21%															
Acquisition Mirror Assembly	10%															
Slit/Decker Assembly	0%															
Filter Wheel Assembly	0%															
Grating Turret	0%															
Prism Turret	0%															

% Complete: 5%
Total Milestones: 46
Completed Milestones: 0

Scope Changes:

- None.

Pending Issues & Resolutions:

- The second Camera Assembly barrel started late because of prototype design work, but is now in design.
- Work on Filter Wheel and Environmental Cover Assembly mechanisms was delayed for the same reason, but has now started.

Project Manager's Assessment of work Package Health:

- Good. The confidence level in the design of the mechanisms is high. The 3D designs will be adjusted to reflect/include results from the prototyping and bench interface definition.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Bench Assemblies

WBS: 5.3.2

Project Description: Design and fabrication of the four cold bench assemblies used in GNIRS.

WPM: L. Goble

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$194,142	\$27,245	\$166,897	\$194,142
Capital	\$101,069	\$259	\$100,810	\$101,069

Key Personnel		
Title	Name	% Dedicated
ME	Goble	100
MD	Andrew	100
MT	Davis	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$12.16	\$12,768	\$12,312	\$2,204	\$0	\$228	\$14,478	\$12,008	\$17,708	\$13,56
Actual Labor	\$0	\$1666	\$7,025	\$8,270	\$6,953	\$3,331				
Cum Over/Under	\$12.16	\$11,102	\$17,605	\$11,539	\$4,586	\$8,436				
FTE Loading (FTE)										
Planned	0	2	2	1	2	2	2	2	2	3
Actual	0.0	0.3	1.2	1.4	1.1	0.5				
Capital (\$K)										
Planned Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,000	\$
Actual Capital	\$0	\$282	\$283	\$0	-\$306	\$0				

Key Milestones		
Activity	Date	Status

Activity	%	2000														
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Spectrograph Bench	1%															
OIWFS Assembly	10%															
Collimator Assembly	0%															
Fore Optics Assembly	9%															

% Complete: 5%
Total Milestones: 23
Completed Milestones: 0

Scope Changes:

- None.

Pending Issues & Resolutions:

- This effort is on the project critical path to Prefabrication Review.
- The approach being taken is to create a solid model of the whole instrument and use this model with NASTRAN to validate the bench design(s). This has delayed the actual 3D solid model design of the benches, but should make the overall task move more quickly.

Project Manager's Assessment of Work Package Health:

- Fair. Any further delay in bench design will impact the project and cause a slippage in year 2000 delivery of the instrument.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Fixed Assemblies

WBS: 5.3.3

Project Description: All assemblies with no moving parts except the optical benches.

WPM: G. Muller

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$353,533	\$553	\$352,980	\$353,533
Capital	\$188,986	\$18	\$188,968	\$188,986

Key Personnel		
Title	Name	% Dedicated
ME	Muller/Goble	100
MD	Andrew	100
MD	Rosin	100
MD	Downey	100
MD	Robles	100
MT	Davis	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,044	\$4,636	\$6,612
Actual Labor	\$0	\$358	\$195	\$0	\$0	\$0				
Cum Over/Under	\$0	-\$358	-\$553	-\$553	-\$553	-\$553				
FTE Loading (FTE)										
Planned	0	0	0	0	0	0	0	1	1	1
Actual	0.0	0.1	0.0	0.0	0.0	0.0				
Capital (\$K)										
Planned Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$640
Actual Capital	\$0	\$0	\$18	\$0	\$0	\$0				

Key Milestones		
Activity	Date	Status

Activity	%	2000														
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Entrance Window Assembly	0%															
Detector Mount Assembly	0%															
Cryo Cooler Assembly	0%															
Environmental Cover Filter	0%															
Bulkhead Assembly	0%															
Front Radiation Shield Assembly	0%															
Rear Radiation Shield Assembly	0%															
Front Dewar Shell	0%															
Rear Dewar Shell	0%															
Vertical Installation Frame Assembly	0%															
Horizontal Installation Frame Assembly	0%															
Dewar Mount Truss Assembly	0%															
Thermal Enclosure Mount Assembly	0%															

% Complete: 0%
Total Milestones: 67
Completed Milestones: 0

Scope Changes:

- None.

Pending Issues & Resolutions:

- None.

Project Manager's Assessment of Work Package Health:

- None.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Electronics

WBS: 5.4

Project Description: Design and fabrication of the GNIRS electronics subsystems

WPM: A. Rudeen

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$132,658	-\$5,509	\$138,167	\$132,658
Capital	\$11,900	-\$3,340	\$15,240	\$11,900

Key Personnel		
Title	Name	% Dedicated
PS	Elias	20
EE	Rudeen	100

Key Milestones		
Activity	Date	Status
Project Start	1/1/1999	C

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$0	\$0	\$1216	\$6,080	\$8,512	\$16,606	\$12,312	\$22,800	\$12,768	\$11,55
Actual Labor	\$0	-\$5,509	\$0	\$0	\$0	\$0				
Cum Over/Under	\$0	\$5,509	\$6,725	\$12,805	\$21,317	\$37,923				
FTE Loading (FTE)										
Planned	0	0	0	1	1	3	2	4	2	
Actual	0.0	-0.9	0.0	0.0	0.0	0.0				
Capital (\$K)										
Planned Capital	\$0	\$0	\$750	\$0	\$4,200	\$1,500	\$200	\$750	\$3,000	\$
Actual Capital	\$0	-\$3,707	\$364	\$3	\$0	\$0				

Activity	%	2000														
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Thrm1 Encl Int. Cabling & Connections	0%															
Ext. Inst Wiring & Cables	0%															
Dewar Warm-up Controller	0%															
Dewar Electronics	0%															

% Complete: 0%
Total Milestones: 14
Completed Milestones: 0

Scope Changes:

- None.

Pending Issues & Resolutions:

- None.

Project Manager's Assessment of Work Package Health:

- Good. A new EE will start coming up to speed on the GNIRS electronics in March and this work will move quickly after that.

GNIRS MONTHLY REPORT

August 99 to May 00

Project Title: GNIRS Software

WBS: 5.5

Project Description: Design, code and test of the GNIRS Engineering and System software.

WPM: R. Wolff

	Original Budget	Actual Spent Cum	Est. To Go	Est. Project Total
Labor Cost	\$156,256	\$3,976	\$152,280	\$156,256
Capital	\$0	\$32	-\$32	\$0

Key Personnel		
Title	Name	% Dedicated
PS	Elias	10
P1	TBD	100
P2	TBD	100

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Labor Costs (\$K)										
Planned Labor	\$0	\$0	\$0	\$0	\$0	\$6,080	\$0	\$7,600	\$10,032	\$13,376
Actual Labor	\$0	\$0	\$0	\$0	\$994	\$2,982				
Cum Over/Under	\$0	\$0	\$0	\$0	-\$994	\$2,104				
FTE Loading (FTE)										
Planned	0	0	0	0	0	1	1	1	1	1
Actual	0.0	0.0	0.0	0.0	0.2	0.5				
Capital (\$K)										
Planned Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Actual Capital	\$0	\$0	\$0	\$0	\$0	\$32				

Key Milestones		
Activity	Date	Status
SW Plan	11/1/1999	
Eng SW Req	2/1/2000	
Sys SW Req	4/1/2000	

Activity	%	2000														
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Software Plan	0%															
Engineering Software	0%															
System Software	0%															

% Complete: 0%
Total Milestones: 10
Completed Milestones: 0

Scope Changes:

- None.

Pending Issues & Resolutions:

- None.

Project Manager's Assessment of Project Health:

- Good. The software area of the project is under control.